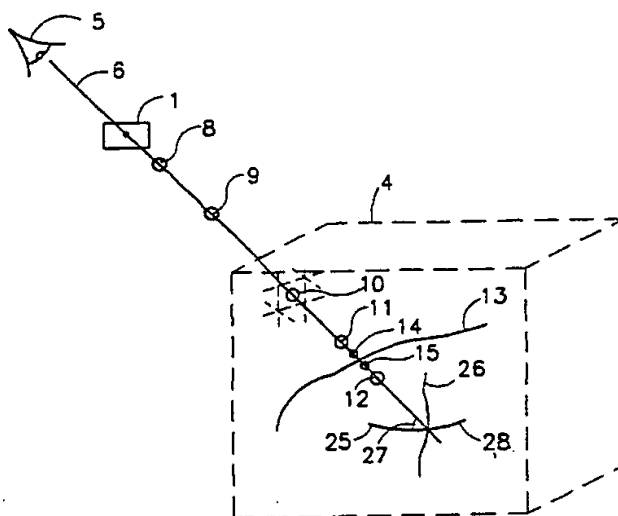




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06T 15/20	A1	(11) International Publication Number: WO 00/33257 (43) International Publication Date: 8 June 2000 (08.06.00)
(21) International Application Number: PCT/IL99/00639 (22) International Filing Date: 26 November 1999 (26.11.99) (30) Priority Data: 127314 27 November 1998 (27.11.98) IL (71) Applicant (for all designated States except US): ALGOTEC SYSTEMS LTD. [IL/IL]; Hamelacha Street 4, P.O. Box 2408, Industrial Zone, 43000 Raanana (IL). (72) Inventors; and (75) Inventors/Applicants (for US only): AKERMAN, Shmuel [IL/IL]; Talpiot Street 28, 52533 Ramat Gan (IL). MILLER, Gad [IL/IL]; 42940 Kfar Yedidya (IL). (74) Agents: FENSTER, Paul et al.; Fenster & Company Patent Attorneys, Ltd., P.O. Box 10256, 49002 Petach Tikva (IL).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: A METHOD FOR FORMING A PERSPECTIVE RENDERING FROM A VOXEL SPACE

**(57) Abstract**

A method for forming a high spatial resolution perspective rendering from a low spatial resolution voxel space is disclosed. The method comprises steps of: a) initializing a virtual window of predetermined resolution pixels, and placing the virtual window in or near the voxel space; b) sparsely ray-casting a plurality of vectors from a predetermined vantage-point through the virtual window into the voxel space; and c) calculating a visualization-value at a series of positions along each vector. In a position ordering of steps from the vantage-point to the pixel, an accumulated transparency-value threshold is calculated. Values of proximate voxels are interpolated into an interpolated voxel value for each position. The interpolated voxel values are then transformed into a derived visualization-value and transparency value.